

BIBLIOGRAPHY

C. FITZHUGH TALMAN, in Charge of Library

RECENT ADDITIONS

The following have been selected from among the titles of books recently received as representing those most likely to be useful to Weather Bureau officials in their meteorological work and studies:

André, Ch.

Sur les mouvements verticaux de l'atmosphère. [Lyon.] n. d. 4 p. 26 $\frac{1}{2}$ cm.

André, Ch., & Raulin, A.

Influence de la nature du sol sur la température à son intérieur. Lyon. 1891. 20 p. plates (fold.) 28 cm.

Besson, Louis.

La température à Paris d'après cinquante années d'observations. [Paris. 1926.] 47 p. figs. 25 $\frac{1}{2}$ cm. (Annales des Serv. tech. d'hygiène de la ville de Paris. v. 7. Météorologie.)

Burns, G. Richard.

Portable instrument for measuring solar radiation in forests. Burlington. 1927. 30 p. figs. 23 cm. (Studies in tolerance of New England forest trees, no. 6.) (Vt. agric. exp. sta., Bull. 261, Feb., 1927.)

Committee on the physical and chemical oceanography of the Pacific.

Report of the chairman, T. Wayland Vaughan. n. p. n. d. 26 p. 23 $\frac{1}{2}$ cm.

Corbett, L. C., & others.

Fruit and vegetable production. [Washington.] n. d. p. 151-452. illus. 23 $\frac{1}{2}$ cm. U. S. Dept. agric. Separate from Yearbook 1925. no. 931. (Includes sections on relations of climate and weather to fruit and vegetable production.)

Cox, G. W.

Some notes on the circulation of the atmosphere over South Africa. p. 103-167. figs. 24 cm. (So. African journ. sci., v. 23, Dec., 1926.)

Dobrescu, I. M.

Meteorologia agricolă. Bucureşti. n. d. 171 p. figs. plate (fold.) 21 $\frac{1}{2}$ cm.

Eredia, Filippo.

Sul calcolo delle precipitazioni acquee normali nella loro ripartizione annuale. Roma. 1922. 10 p. plate (fold.) 25 $\frac{1}{2}$ cm. (Estr.: Annali del Consiglio super. delle acque. Anno 1922. v. 4, fasc. 2-3.)

Great Britain. Meteorological office.

Particulars of meteorological reports issued by wireless telegraphy in Great Britain and the countries of Europe and North Africa. (Fifth edition.) 1927. vi, 154 p. 24 $\frac{1}{2}$ cm. (M. O. 252.)

Gundry, P. G.

Problem of atmospheric electricity. p. 16-25. 24 cm. (So. African journ. sci. v. 23, Dec., 1926.)

Houk, Ivan E.

Evaporation on United States reclamation projects. With discussion . . . p. 266-378. illus. 23 cm. (Amer. soc. civil eng. Trans. paper no. 1600. v. 90, June 1927.)

Howarth, O. J. R.

Climate and geography. London. 1927. 53 p. figs. 18 $\frac{1}{2}$ cm.

Huntington, Ellsworth.

High cost of weather. A résumé of the year 1926. p. 38-42. 24 cm. [Cutting from Amer. rev. of rev., v. 75, no. 1, Jan., 1927.]

Johansson, Osc. V.

Ueber die Asymmetrie der meteorologischen Schwankungen Helsingfors. 1926. 134 p. plate. 24 cm. (Soc. scient. Fenn. Comm. physico-math. III. 1.) (Mitt. Met. Inst. der Univ., Helsingfors, N:o 1.)

Ueber die interdiurne Veränderlichkeit der Temperatur, besonders in Finnland. Helsingfors. 1926. 52 p. 24 cm. (Mitt. Met. Inst. der Univ., Helsingfors. N:o 2.)

Kallio, Niilo.

Ueber die Windverhältnisse der oberen Luftschichten am aerologischen Observatorium Ilmala nebst Uebersichten für andere Gegenden. Helsingfors. 1926. iv, 149 p. plate. 24 $\frac{1}{2}$ cm. (Soc. scient. Fenn. Comm. physico-math. III. 3.) (Mitt. Met. Inst. der Univ., Helsingfors. N:o 3.)

Lindholm, F.

Om vertikal temperaturgradient, om horisontala temperatur- och lufttäthetsgrader samt om molnighetsfördelningen över Sverige. [Uppsala. 1926.] p. 169-187. figs. 22 cm. (Artilleri-Tidskrift. 55:e drg. Häft. 5.)

Sur la structure thermique de l'atmosphère au-dessus de la Suède méridionale; sondages faits par avion en 1924 et 1925. Stockholm. 1927. 41 p. figs. 32 $\frac{1}{2}$ cm. (Medd. Statens met.-hydrog. anstalt. Bd. 3. N:o 10.)

Morize, Henrique.

Contribuição ao estudo do clima do Brasil. 2d. ed. Rio de Janeiro. 1927. viii, 116 p. plates (part fold.) 32 cm.

Norbury, Frank Parsons.

Seasonal climatic curves. 17 p. figs. 24 $\frac{1}{2}$ cm. (Repr.: Welfare mag., March, 1927.)

Royal meteorological society.

Rainfall atlas of the British Isles. South Kensington. 1926. 12 p. 43 maps. 32 cm.

Schereshevsky, Ph. & Wehrle, Ph.

La semaine internationale des nuages. A. Étude de la journée du 25 septembre 1923 sur l'Europe occidentale. Paris. 1926. Texte. 54 p. plate (fold.) 31 $\frac{1}{2}$ cm. Planches. 37 plates. 31 $\frac{1}{2}$ cm. (Off. nat. mét. de France. Memorial no. 16.)

Taylor, Norman.

Climate of Long Island: its relation to forests, crops, and man. Ithaca. 1926. 20 p. figs. 23 cm. (Cornell univ. Agric. exper. sta. Bull. 458, March, 1927.)

Vernon, H. M. & others.

Relation of atmospheric conditions to the working capacity and the accident rate of coal miners. London. 1927. iv, 34 p. fig. 24 $\frac{1}{2}$ cm. (Med. research coun., Indust. fatigue research bd. Report no. 39.)

RECENT PAPERS BEARING ON METEOROLOGY

The following titles have been selected from the contents of the periodicals and serials recently received in the library of the Weather Bureau. The titles selected are of papers and other communications bearing on meteorology and cognate branches of science. This is not a complete index of all the journals from which it has been compiled. It shows only the articles that appear to the compiler likely to be of particular interest in connection with the work of the Weather Bureau.

Association française pour l'avancement des sciences. Conférences. 49. session. Grenoble. 1925.

Baldit, A. Sur les variations anormales de la température en avant d'un front chaud. p. 268-273.

Delcambre, E. Exemple montrant la nécessité de la protection météorologique. p. 237-241.

Rempp, Georges & Elsaesser Auguste. Un cas remarquable de variation diurne de la pression. p. 249-252.

Rigotard, Laurent. Emploi d'un observateur ambulant. Constitution de profils météorologiques d'itinéraires pour l'étude des climats. p. 247-248.

Rothé, E., Rempp, C., Lacoste, J., Bois, Ch., Hée, A., & Dammann, Y. Observations faites à l'occasion de l'explosion d'Hagondange par l'Institut de physique du globe de Strasbourg. p. 252-255.

Wehrle, Ph., & Vaut, A. Météorologie dynamique. Quelques effets des interférences sur les systèmes nuageux et les discontinuités frontales. p. 241-247.

Aviation. New York. v. 22. June 20, 1927.

Upson, Ralph H. Meteorological aspects of the 1927 national balloon race. p. 1382; 1384.

Beiträge zur Geophysik. Leipzig. 17. Band, 1. Heft. 1927.

Letzmann, Johannes. Experimentelle Untersuchungen an Wasserwirbeln. p. 40-85.

France. Académie des sciences. Comptes rendus. Paris. t. 184. 30 mai 1927.

Besson, Louis. Sur le refroidissement de l'air au coucher du soleil. p. 1340-1341.

Meteorological magazine. London. v. 62. May, 1927.

Barlow, E. W. The meteorology of solar eclipses. p. 77-81.

Fairgrieve, J. Rainfall atlas of the British Isles. p. 81-84.

- Meteorologische Zeitschrift.* Braunschweig. Band 44. Mai 1927.
 Baur, Franz. Bemerkungen zur Methode der Beziehungs-gleichungen. p. 182-185.
 Conrad, V. Zum Klima von Besançon. p. 185-186.
 Deil, A. E. Der Gang der Zenitpolarisation bei negativen Sonnenhöhen in Simferopol. p. 187.
 Exner, Felix M. Heilstättenklima in den österreichischen Ostalpen. p. 187-174.
 Fischer, Karl. Eine grundsätzliche Frage zu Zunkers Ver-dunstungsformel. p. 178-179.
 Köppen, W. Wechsel in der phänologischen Zeitfolge. p. 174-176.
 Kugelblitz. p. 188.
 Schmauss, A. Wie steht es um die meteorologischen Perio-den? p. 176-178.
 Škreb, S. Formel für die Berechnung der Windgeschwindigkeit aus der Windstärke. p. 185.
 Škreb, S. Verhältnis zwischen mittlerer stündlicher Regen-menge und mittlerem Dampfdruck. p. 181-182.
 Troeger, H. Über die Datierung der Zyklonenfamilien. p. 179-181.
 Wagner, A. Beziehungen zwischen Sonnenschein und Bewöl-kung in Wien. p. 161-167.
 Wegener, Kurt. Bemerkung über Frühlings- und Herbsttau. p. 188.
Physico-mathematical society of Japan. Proceedings. Tōkyō. v. 9. March, 1927.
 Kobayasi, Tatuo. On the mechanism of cyclones and anti-cyclones. p. 45-62.

- Royal meteorological society. Memoirs.* London. v. 1. no. 7.
 Douglas, C. K. M. On the relation between temperature changes and wind structure in the upper atmosphere.
Royal meteorological society. Quarterly journal. London. v. 53. April, 1927.
 C[avel], C. J. P. Lieut.-Col. Henry Mellish, C. B., D. L. p. 189-190. [Obituary.]
 Clark, J. Edmund. Francis Campbell Bayard, LL. M. p. 188-189. [Obituary.]
 Glasspoole, John. The variability of average monthly rain-fall throughout the year. p. 127-147.
 Mr. C. Harding. p. 187. [Obituary.]
 Pick, W. H., & Wright, G. A. Mammato-cumulus cloud at Cranwell, Lincolnshire. p. 185-186.
 Puri, Amar Nath. Investigations on the behaviour of hydro-metric hairs. p. 115-125.
 Richardson, L. F., & Proctor, Denis. Diffusion over distances ranging from 3 km. to 86 km. p. 149-151. [Abstract.]
 Simpson, G. C. Thunderstorms. p. 172-176.
 Thomson, A. Tropical cyclones in the central South Pacific during 1925-26. p. 178-181.
 Walker, Gilbert. The Atlantic Ocean. p. 97-113.
 Watson, R. A. Correlation of daily rainfall on the east and west of Scotland. p. 183-185.
 Watt, R. A. Watson. The weather and its ways. III. Atmospherics and the atmosphere. p. 169-172.
Technique aéronautique. Paris. 18 année. Avril 1927.
 Bureau, Robert. Le rôle des ondes électromagnétiques dans la protection de la navigation aérienne. p. 110-126.

SOLAR OBSERVATIONS

SOLAR AND SKY RADIATION MEASUREMENTS DURING JUNE, 1927

By IRVING F. HAND

For a description of instruments and exposures and an ac-count of the method of obtaining and reducing the measure-ments, the reader is referred to the REVIEW for January, 1924, 52: 42, January, 1925, 53: 29, and July, 1925, 53: 318.

From Table 1 it is seen that solar radiation intensities averaged above the June normals at all three stations, particularly at Washington. At this station a measured intensity of 1.47 gr. cal. per cm.² obtained at noon on the 27th exceeds the previous noon intensity for June by about 3 per cent.

Table 2 shows that the total solar and sky radiation received on a horizontal surface at both Madison and Lincoln averaged above normal, while that received at Washington was close to normal.

Skylight polarization measurements made at Madison on 11 days give a mean of 60 per cent, with a maximum of 65 per cent on the 7th. These are close to normal values for June at Madison. At Washington, measure-ments made on four days give a mean of 57 per cent, with a maximum of 59 per cent on the 27th. These are slightly above the corresponding averages for June at Washington.

TABLE 1.—Solar radiation intensities during June, 1927

[Gram-calories per minute per square centimeter of normal surface]
 Washington, D. C.

Date	Sun's zenith distance									
	8 a.m.	Air mass								
		A. M.					P. M.			
e.	5.0	4.0	3.0	2.0	1.0	2.0	3.0	4.0	5.0	e.
June 1	7.57	0.71	0.85	1.00						7.57
6	7.04	0.99	1.13	1.28	1.46					8.18
8	10.59			0.74						12.24
13	8.18			1.12	1.36					6.76
16	6.27	0.91	1.02	1.18	1.38					5.56
21	13.61	0.91	1.02	1.08	1.28					11.81
27	7.57	0.87	0.98	1.11	1.24	1.48				10.59
28	11.38			0.98						13.13
29	13.61	0.64	0.78	0.87	1.00	1.32				8.48
Means	(8.76)	0.87	1.00	0.95	1.49					14.60
Departures	+0.20	+0.22	+0.27	+0.14	+0.18					-

1 Extrapolated.

TABLE 1.—Solar radiation intensities during June, 1927—Contd.
 Madison, Wis.

Date	Sun's zenith distance										Noon	
	75th mer. time	Air mass										
		A. M.					P. M.					
e.	5.0	4.0	3.0	2.0	1.0	2.0	3.0	4.0	5.0	e.		
June 3	8.18						1.12				9.47	
7	9.14				1.01						9.14	
11	8.49				1.13						8.48	
14	5.56						1.39				6.76	
15	5.56				1.16						5.56	
22	11.38				1.15						11.81	
23	8.18				1.43						10.59	
24	6.50				1.18	1.40					13.13	
27	7.29				1.16	1.33					8.48	
28	9.14				1.16	1.34	1.15				14.60	
29	13.61		0.87	1.00	1.14	1.28					17.37	
30	17.37				1.05	1.26					17.37	
Means		(0.87)	(1.00)	1.13	1.32	(4.15)						
Departures		+0.01	+0.03	+0.03	+0.00	+0.08						

Lincoln, Nebr.

June 4	10.59	0.88	0.98	1.17	1.36						9.47
7	9.47		1.04	1.22	1.45						8.18
9	11.81			1.02	1.26						12.24
10	8.48			1.25	1.45						6.27
21	10.97		0.94	1.11	1.45	1.18					9.14
23	10.21		0.97	1.16	1.43	1.15	0.98	0.84			9.83
24	13.13			1.22	0.99	0.80	0.65				14.10
25	13.13		0.92	1.12	1.43	1.21	1.05	0.89			9.47
27	14.10		0.93	1.14	1.34	1.09	0.90	0.74			17.37
28	18.59		0.98	1.16	1.43	1.14	0.98				18.59
29	15.65		0.85	1.08	1.29						14.10
Means		(0.88)	0.95	1.14	1.37	1.13	0.94	0.78			
Departures		+0.11	+0.02	+0.04	+0.01	+0.03	+0.04	+0.01			

1 Extrapolated.

TABLE 2.—Solar and sky radiation received on a horizontal surface
 [Gram-calories per square centimeter of horizontal surface]

Week begin-	Average daily radiation							Average daily departure from normal		
	Washington	Madison	Lin-col-n	Chi-ago	New York	Twin Falls	Wash-ing-ton	Mad-i-son	Lin-col-n	
1927	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.	cal.
June 4	437	617	632	515	446	627	-48	+97	+57	
11	501	472	310	417	450	726	+7	-30	-200	
18	410	515	627	436	388	758	-68	-13	+64	
25	607	651	715	586	427	747	+94	+106	+98	
Deficiency since first of year on July 1							-7,707	-4,928	-5,857	